

Appl. No. 10/800,747
Reply to Office Action of March 3, 2006

REMARKS/ARGUMENTS

In paragraph 3 of the detailed action, the Examiner rejected claims 1-27 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

The first paragraph of 35 U.S.C. 112 reads:

"The Specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention."

With respect, Applicant submits that the specification satisfies the first paragraph of 35 U.S.C. 112, as the present specification clearly enables one skilled in the art to make and use the present invention, and also includes a best mode contemplated by the inventor. In fact, the Examiner has pointed to the fact that an optical add-drop multiplexer is described in the specification as a way of dropping wavelengths; thus a person reading the specification and the claims would be able to practice the invention.

In order to clarify that alternative mechanisms of dropping wavelengths are applicable to the present invention, Applicant has amended the disclosure to include statements that make it clear that an add-drop multiplexer is an example of a mechanism by which wavelengths might be dropped. Specifically, Applicant has added the following statement beginning at page 18, line 16: "Add-drop multiplexers are an example of a mechanism that might be employed to drop one or more wavelengths subsequent to each length of EDF. One skilled in the art will appreciate that alternative mechanisms for dropping one or more wavelengths might be employed in some embodiments." The statement has basis in the subject matter of independent claim 1; therefore it does not constitute the addition of new subject matter.

Appl. No. 10/800,747
Reply to Office Action of March 3, 2006

In view of the fact that the specification enables one skilled in the art to make and use the present invention, and includes a best mode contemplated by the inventor, the Examiner is respectfully requested to withdraw the rejection of claims 1-27 under the first paragraph of 35 U.S.C. 112.

In paragraph 5 of the detailed action, the Examiner rejected claims 1-27 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner points to the alleged lack of enablement under 35 U.S.C. 112, first paragraph, in support of his rejections under 35 U.S.C. 112, second paragraph. As stated above, the Examiner's lack of enablement argument is based on the Examiner's assertion that the specification only describes optical-add drop multiplexing as a means of dropping a wavelength.

Applicant respectfully submits that in view of the arguments presented above in respect of the rejections under 35 U.S.C. 112, first paragraph, enablement is clearly not an issue; therefore one skilled in the art would be able to practice the invention and would clearly understand the scope of the claims. Applicant submits that it is well known in the art that different mechanisms can be employed to drop a wavelength. An add-drop multiplexer is a specific example of such a mechanism. When a term is very well understood in the art, it is respectfully submitted that it is not necessary to list multiple alternative particulars; therefore the Examiner is respectfully requested to withdraw the rejection of claims 1-27 under the second paragraph of 35 U.S.C. 112.

In paragraph 7 of the detailed action, the Examiner rejected claims 1-9, 10-13, 16 and 22 under 35 U.S.C. 102(b) as being anticipated by Srivistava (U.S. Patent No. 6,049,417).

Before setting forth a discussion of the prior art applied in the Office Action, it is respectfully submitted that controlling case law has frequently addressed rejections under 35 U.S.C. § 102. "For a prior art reference to anticipate in terms of 35 U.S.C. Section 102, every element of the claimed invention must be identically shown in a single reference." *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 677, 7 U.S.P.Q.2d 1315, 1317 (Fed. Cir. 1988; emphasis added). The disclosed elements must be arranged as in the claim under review. See *Lindemann*

Appl. No. 10/800,747

Reply to Office Action of March 3, 2006

Machinefabrik v. American Hoist & Derrick Co., 730 F.2d 1452, 1458, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984). If any claim, element, or step is absent from the reference that is being relied upon, there is no anticipation. *Kloster Speedsteel AB v. Crucible, Inc.*, 793 F.2d 1565, 230 U.S.P.Q. 81 (Fed. Cir. 1986; emphasis added). The following analysis of the present rejections is respectfully offered with guidance from the foregoing controlling case law decisions.

The Examiner has pointed to Figure 2 of Srivistava in support of his rejection of claims 1-9, 10-13, 16 and 22. Figure 2 shows an optical amplifier with three parallel amplification branches. In particular, the Examiner has referenced the middle M-BAND branch of Figure 2, which depicts first and second amplifier segments 220 and 227 respectively, which are arranged such that S-BAND, L-BAND and M-BAND wavelengths are amplified by the first amplifier segment 220, which is in series with a demultiplexer 250 that "drops" the once amplified S-BAND and L-BAND wavelengths and passes the once amplified M-BAND wavelengths on in series to the second amplifier segment 227. The Examiner has gone on to argue that because claim 1 of the present application is open-ended, i.e. "An apparatus comprising...", the fact that Srivistava recites that the parallel branches are multiplexed by optical multiplexer 251 does not prevent Srivistava from reading on claim 1. However, claim 1 states that "subsequent to each optical amplification media segment a respective one or more wavelengths in a respective wavelength range is dropped..." and it is clear from Figure 2 of Srivistava that at least one wavelength is not dropped subsequent to the second amplifier segment 227. In fact, the multiplexer 251 adds the parallel wavelengths together to form the output of the amplifier subsequent to the second amplifier segment 227. Claim 1 requires a plurality of segments concatenated in series with dropping after each of the plurality. The plurality requires at least two dropping operations. For example, Applicant's Figure 4 shows three dropping operations.

In view of the fact that the cited reference fails to teach a key limitation of the claims, and also fails to identically show every element of the claimed invention, as is required to find that a prior art reference is anticipated under 35 U.S.C. Section 102, given the rulings in *Kloster Speedsteel AB v. Crucible, Inc.* and *Diversitech Corp. v. Century Steps, Inc.* respectively, the Examiner is respectfully requested to withdraw the 35 U.S.C. 102(b) rejection of claim 1 and claims 2-9, 10-13, 16 and 22, which depend on claim 1.

Appl. No. 10/800,747
Reply to Office Action of March 3, 2006

In paragraph 8 of the detailed action, the Examiner rejected claims 1, 2, 4, 5-8, 10-13, 16 and 21 under 35 U.S.C. 102(e) as being anticipated by Papaparaskeva et al. (U.S. Patent Application Publication 2003/0118347).

The Examiner has pointed to figure 1 and claim 5 of Papaparaskeva et al. in support of his rejection of claims 1, 2, 4, 5-8, 10-13, 16 and 21. The Examiner has stated that Figure 1 of Papaparaskeva et al. discloses "an optical transmission system comprising multiple optical amplification media segments (6a)-(6e), which are concatenated in series." However, the elements (6a)-(6e) in Figure 1 of Papaparaskeva et al. are not optical amplification media segments, rather they are "lengths of optical fiber...[in which]...[t]he fiber type can be of any type and mixed type spans are common in real installed networks." (see page 3, paragraph 28) There is no suggestion in Papaparaskeva et al. that the lengths of optical fiber (6a)-(6e) are optical amplification media segments. Furthermore, although Papaparaskeva et al. discloses that the optical nodes (not the lengths of optical fiber (6a)-(6e)) may contain channel add-drop modules (ADM) (see claim 5) and optical amplification (see page 3, paragraph 28), Papaparaskeva et al. fails to teach or fairly suggest a specific arrangement of optical amplifiers and add-drop modules wherein "subsequent to each optical amplification media segment a respective one or more wavelengths in a respective wavelength range is dropped...". Therefore, as with the Srivistava reference, Papaparaskeva et al. fails to teach a key limitation of the claims, and also fails to identically show every element of the claimed invention, as is required to find that a prior art reference is anticipated under 35 U.S.C. Section 102, given the rulings in *Kloster Speedsteel AB v. Crucible, Inc.* and *Diversitech Corp. v. Century Steps, Inc.* respectively.

In view of the fact that a key limitation in these claims is not taught in the cited reference and the cited reference also fails to identically show every element of the claims, the Examiner is respectfully requested to withdraw the 35 U.S.C. 102(e) rejection of claim 1 and claims 2, 4, 5-8, 10-13, 16 and 21, which depend on claim 1.

In paragraph 10 of the detailed action, the Examiner has rejected claims 14-15 under 35 U.S.C. 103(a) as being unpatentable over Srivistava or in the alternative Papaparaskeva et al. The

Appl. No. 10/800,747
Reply to Office Action of March 3, 2006

Examiner argues that both Srivistava and Papaparaskeva et al. teach that multiple doped fibers in series can be collectively supplied with energy by a single pump laser.

To begin, Applicant respectfully submits that a first criterion required to establish a case of prima facie obviousness has not been satisfied. That is, the prior art references do not teach all of the claimed features.

Claims 14 and 15 are dependent on claim 1. As outlined above in response to the 35 U.S.C. 102 objections, both Srivistava and Papaparaskeva et al. fail to teach key limitations of claim 1; therefore claim 1 distinguishes over both references and all claims that depend from claims 1 distinguish over the references for at least the same reasons.

Since at least one feature, namely that subsequent to each optical amplification media segment a respective one or more wavelengths in a respective wavelength range is dropped, is missing from the references, the first criteria for the prima facie case of obviousness has not been satisfied. Applicant respectfully submits that claims 14 and 15 are patentable over Srivistava and Papaparaskeva et al. since a case of prima facie obviousness cannot be established.

In paragraph 11 of the detailed action, the Examiner has rejected claims 17-20 under 35 U.S.C. 103(a) as being unpatentable over Srivistava or in the alternative Papaparaskeva et al. and further in view of Shimojoh (U.S. Patent No. 6,417,960). The Examiner argues that both Srivistava and Papaparaskeva et al. disclose all the features of claims 17-20 except a noise suppression filter. The examiner further asserts that it is well-known to use a noise suppression filter such as that taught in Shimojoh in an optical transmission system for filtering ASE noise and flattening the gain of an optical amplifier.

To begin, Shimojoh fails to disclose the feature outlined above, which both Srivistava and Papaparaskeva et al. fail to disclose, namely that subsequent to each optical amplification media segment a respective one or more wavelengths in a respective wavelength range is dropped. Therefore, as this key limitation is missing from all of the cited prior art references, Applicant submits that the first criterion required to establish a case of prima facie obviousness has not

Appl. No. 10/800,747
Reply to Office Action of March 3, 2006

been satisfied, and as a result claims 17-20 are patentable over Srivistava, Papaparaskeva et al. and Shimojoh.

Applicant has corrected errors on page 26, lines 5 and 7, page 30, line 16 and page 16, line 23. On page 26, beginning at line 4, the specification currently on file states with reference to Figure 4 that "[i]n the example, two couplers 79, 80 are used to drop the two wavelengths after the second segment 77. This function may alternatively be achieved with a single coupler." However, reference characters 79 and 80 are used with reference to two add-drop multiplexers; therefore the expression above has been amended by replacing the terms "couplers" and "coupler" with "add-drop multiplexers" and "add-drop multiplexer" respectively, such that the expression reads: "In the example, two add-drop multiplexers 79, 80 are used to drop the two wavelengths after the second segment 77. This function may alternatively be achieved with a single add-drop multiplexer." On Page 30, line 16 the specification currently on file refers to "the plurality of multi-port optical add-drop multiplexers 72, 79, 80, 85" but reference character 85 is used to refer to a noise suppression filter (NSF) everywhere else in the specification. As a result, Page 30, line 16 has been amended by replacing the current expression with "the plurality of multi-port optical add-drop multiplexers 72, 79, 80, and the NSF 85". A simple typographical error was corrected on page 16, line 23; a period that was missing has been added to the sentence that ends on that line.

In paragraph 13 of the detailed action, the Examiner has stated that he was unable to identify the two patents by Song et al. that are listed in the Information Disclosure Statement. The two patents by Song et al. are listed as 0181090 and 0181091 in the IDS. These references correspond to US 2002/181090 and US 2002/181091 respectively, which are two applications that have issued as US 6,674,570 and US 6,646,796 respectively.

Appl. No. 10/800,747
Reply to Office Action of March 3, 2006

In view of the forgoing, early favorable consideration of this application is earnestly solicited. In the event that the Examiner has concerns regarding the present response the Examiner is encouraged to contact the undersigned at the telephone number listed below.

Respectfully submitted,

LIJIE QIAO

By



Kelly L. Miranda

Reg. No. 55,960

Tel.: (613) 232-2486 ext. 323

Date: June 5, 2006

RAB:JFS:kbc:rld